Storage Resource manager

Outline

- **Storage Resource Manager – srm**

- **srm basics**

- **Black box example**

- **Not all VOs support the Logical File Catalog:**
    - In all previous examples we could have copied the file directly to the SRM only, bypassing the LFC registration

Data management

- ❑ **http://mooc-inst.sara.cloudlet.sara.nl/mooc/data_transfer.html**

Srm client

☐ **SURL - Physical File Name**

- ▪ $ srmls srm://srm.grid.sara.nl:8443/

  - ✓ 512 /admin/ 512 /usr/ 512 /pnfs/

  - ✓ This listing tells us that this storage system uses a PNFS file system, which means that we're talking to a dCache SRM with underlying PNFS file system.

☐ **srmmkdir srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/ tutor/<replace with a directory name>**

- ▪ Before we copy a file to the dCache SRM we first create our own directory. If we do not do this then SRM will store the files in generated directories, over which we have little or no control.

- ▪ all members of a VO can read/modify/delete all files.

srm basics
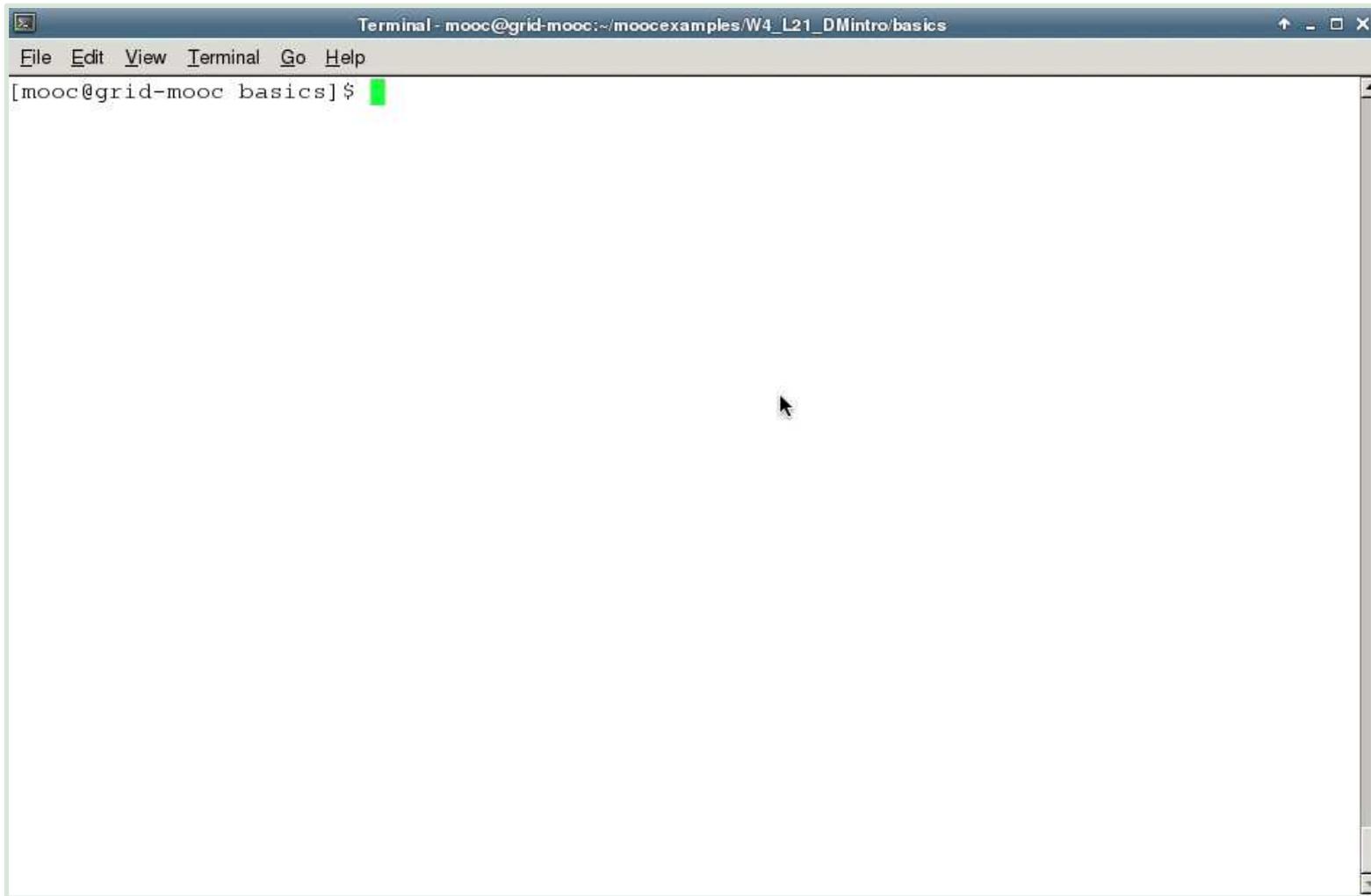
Try it yourself ...

- List contents of a Grid directory:
  - ✓ $ srmls srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/
  - ✓ $ srmls -l srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/
- Create a directory:
  - ✓ srmmkdir srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/<replace with a directory name>
- Create a file:
  - ✓ $ echo "This file is transferred from the local VM to the Grid storage" > fileVMtoGrid
- Copy file from local disk to Grid:
  - ✓ $ srmcp file:///`pwd`/<filename> srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/<dir_name>/<filename>
- Copy file from Grid to local disk:
  - ✓ $ srmcp -server_mode=passive srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/<dir_name>/<filename> file:///`pwd`/<filename>
- Remove a directory on Grid
  - ✓ $ export SRM_PATH=/usr/share/srm/
  - ✓ $ srmrmdir srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/<dir_name>
  - ✓ If you get this error, remove all the files first -> Return code: SRM_NON_EMPTY_DIRECTORY
  - ✓ $ srmrm srm://srm.grid.sara.nl:8443/pnfs/grid.sara.nl/data/tutor/<dir_name>/<filename>

Black box example

□ **Black box example:**

    ✓   Execute with: ./bbox -n <value>

    ▪   List directories on the Grid SE

    ▪   Copy file from UI to Grid SE

    ▪   Copy file from Grid SE to UI

    ▪   Copy file from Grid SE to WN

    ▪   Copy file from WN to Grid SE

bbox submit

```
mooc$ 
```
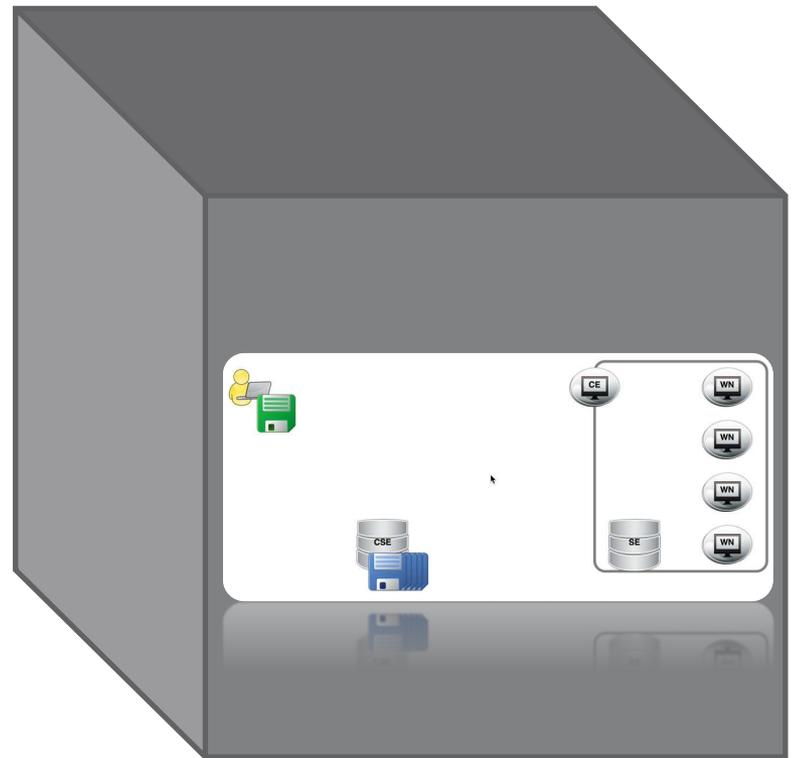
bbox output

```
mooc$ glite-wms-job-output -i jobIDS --dir .
```
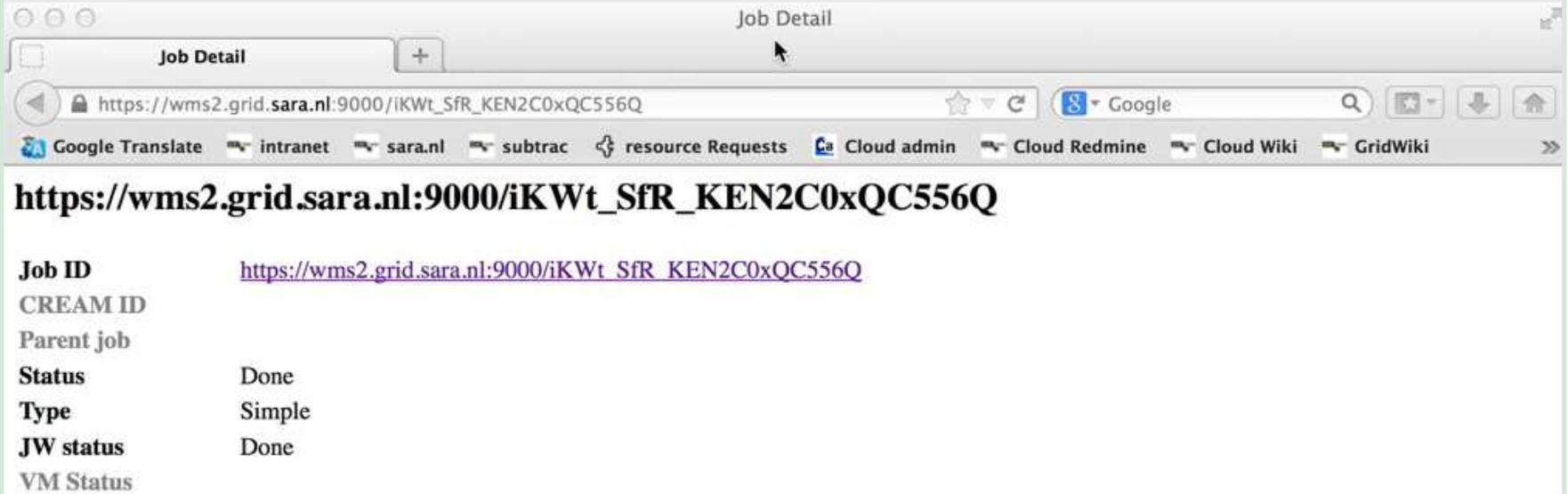
○ ○ ○   Job Detail

☐   **Job Detail**   ＋

🔒 https://wms2.grid.**sara.nl**:9000/iKWt_SfR_KEN2C0xQC556Q   ☆ ▽ C | 8 ▾ Google

🗿 Google Translate   🔻 intranet   🔻 sara.nl   🔻 subtrac   ♦ resource Requests   🅒 Cloud admin   🔻 Cloud Redmine   🔻 Cloud Wiki   🔻 GridWiki   »

https://wms2.grid.sara.nl:9000/iKWt_SfR_KEN2C0xQC556Q

Job ID	https://wms2.grid.sara.nl:9000/iKWt_SfR_KEN2C0xQC556Q
CREAM ID	
Parent job	
Status	Done
Type	Simple
JW status	Done
VM Status	